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SCIENTIFIC RESEARCH ON PAPAVER BRACTEATUM 1/

No. 11

DETERMINATION OF THEBAINE IN PAPAVER BRACTEATUM 2/

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1/ General note: The views expressed by collaborating scientists in their contributions to the programme are not necessarily shared by the Secretariat.

2/ In the report of the Second Working Group on Papaver bracteatum (document ST/SOA/SER.J/2), it was recommended that methods for the determination of thebaine in Papaver bracteatum should be compared and evaluated; to achieve this, it was decided that participants in the Working Group would forward their methods for publication in this series so that these could be tried out in the various laboratories.

3/ This paper was submitted by Dr. Bernard B. Brown, Director of Research, S.B. Penick and Company.

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DETERMINATION OF THEBAINE IN PAPAVER BRACTEATUM UNB-17 4/

The milled crude material is extracted at 40° C with a 50/50 water-methanol mixture adjusted to 0.5 N with acetic acid. The methanol is removed in vacuo and the aqueous residue back washed with ether. The acid water is alkalinized to pH 9.5 in the presence of chloroform and the chloroform extract evaporated to dryness in vacuo. The bases so obtained are assayed by G.L.C. as described in J. Chromatography 89, 76-9 (1974).

Sample UNB-17 yielded 3.7% total bases with a G.L.C. purity of 90%, equivalent to 3.3% anhydrous thebaine alkaloid on the sample as received.

These bases afforded a 2.8% primary yield of pure thebaine, MP 194-196° C, whose infrared spectrum (Nujol mull) matched an authentic sample.

4/ The method is applicable to all plant parts either wet or dry, and with minor modifications, can be used for the recovery of micro quantitites of alkaloids.